

FIG. 1

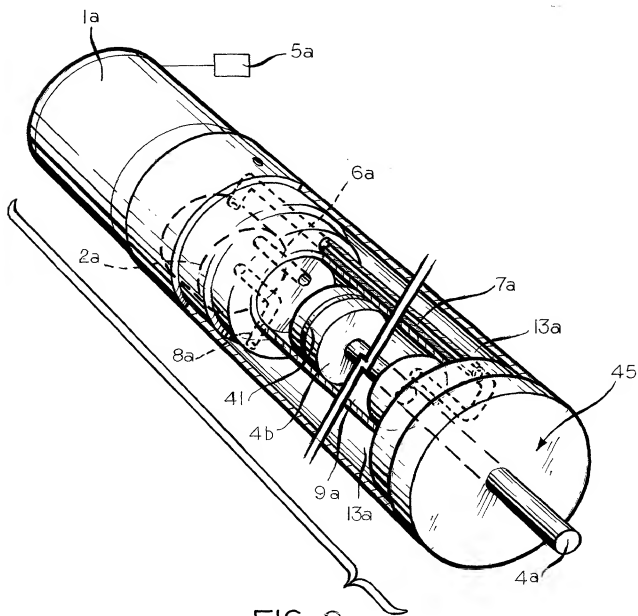


FIG. 2

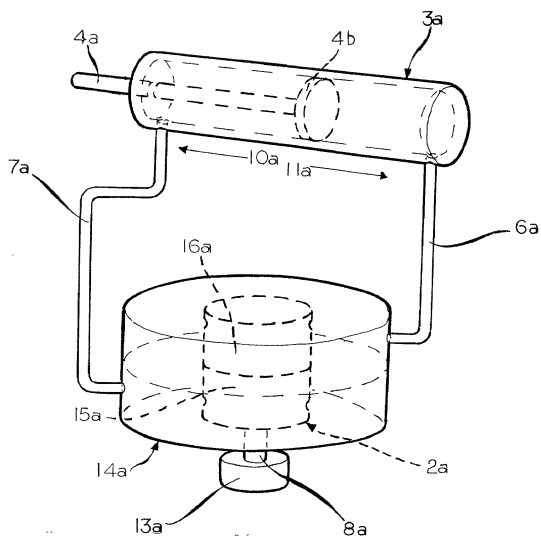


FIG.3

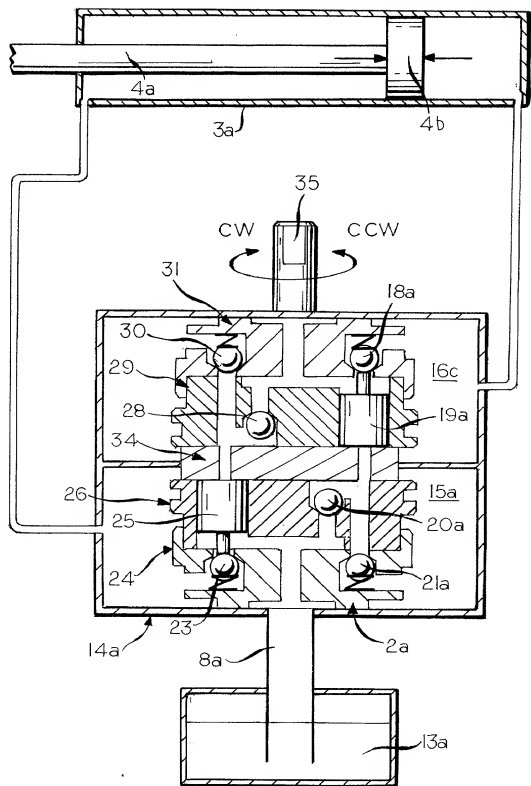


FIG.4

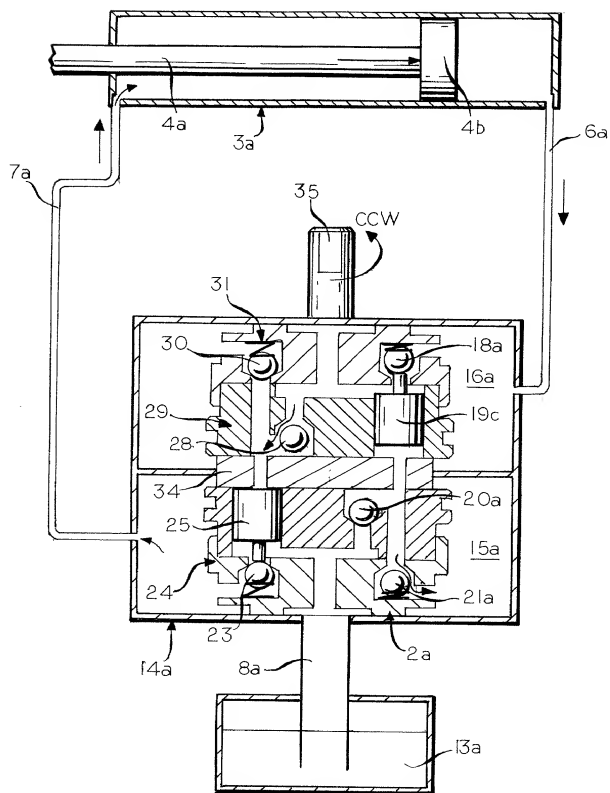


FIG.5

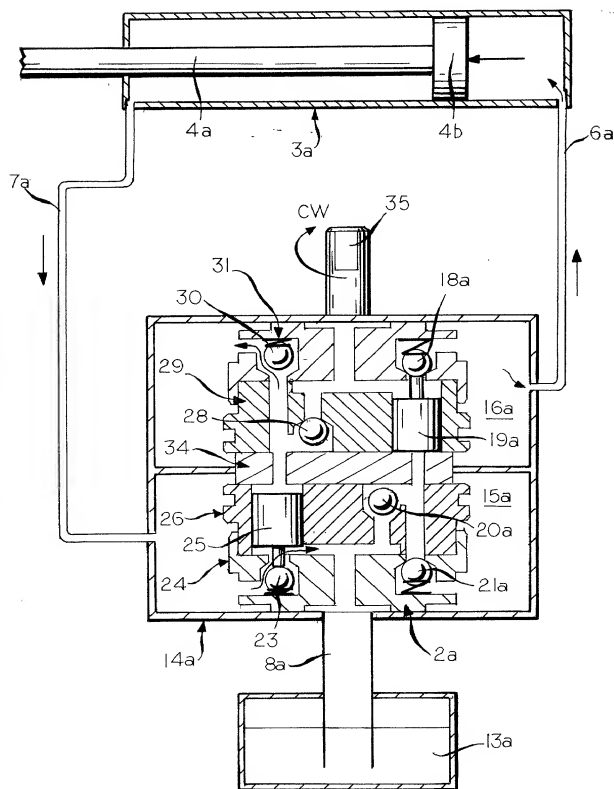


FIG.6

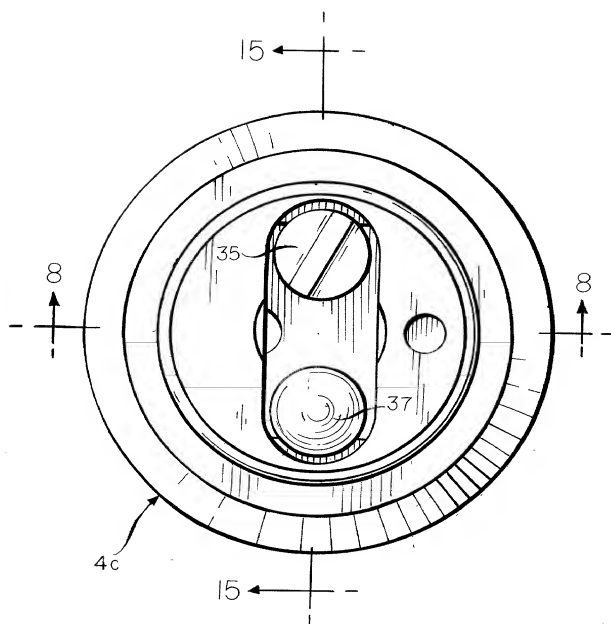
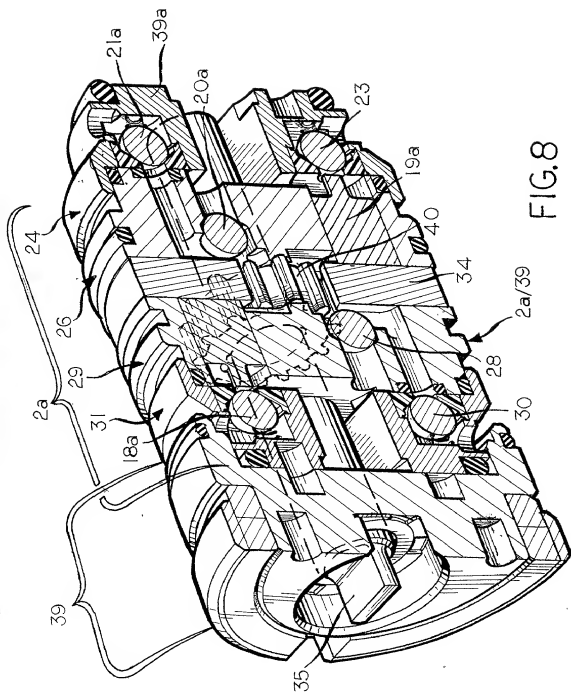


FIG.7



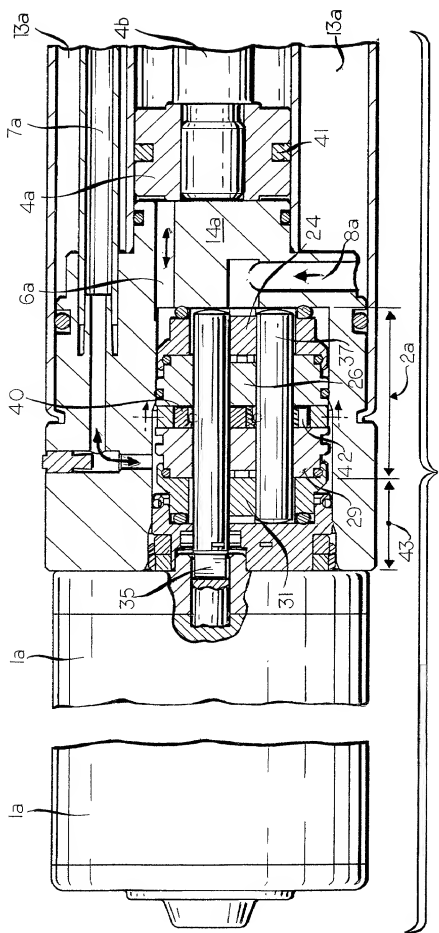


FIG. 9

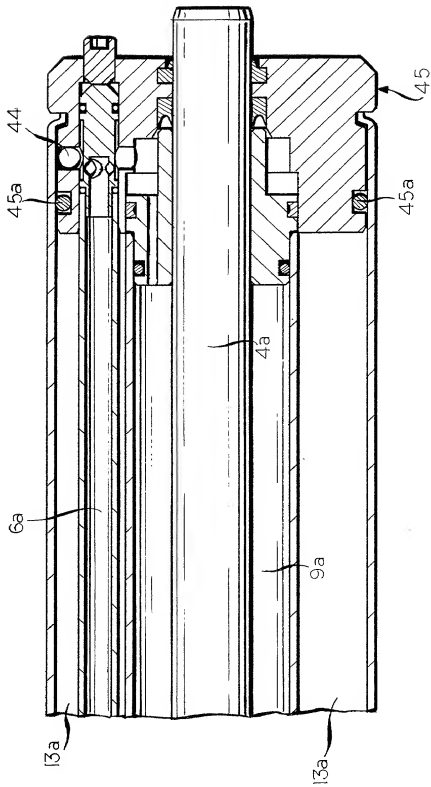


FIG.10

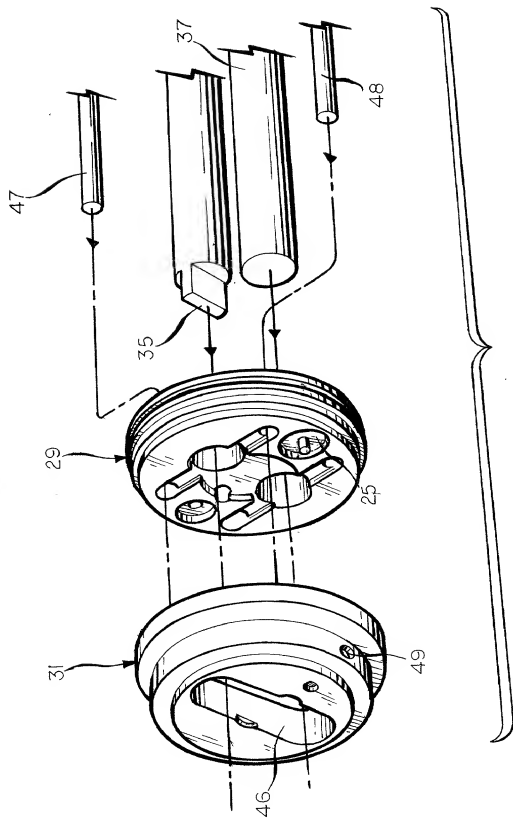


FIG. 11

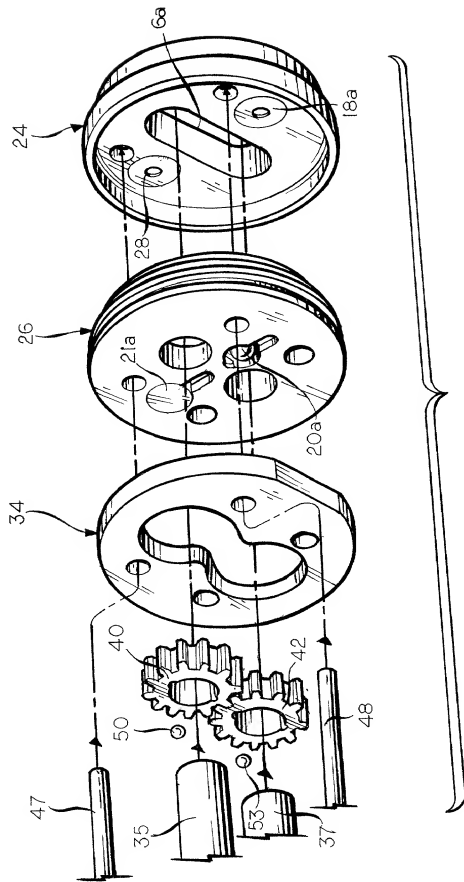
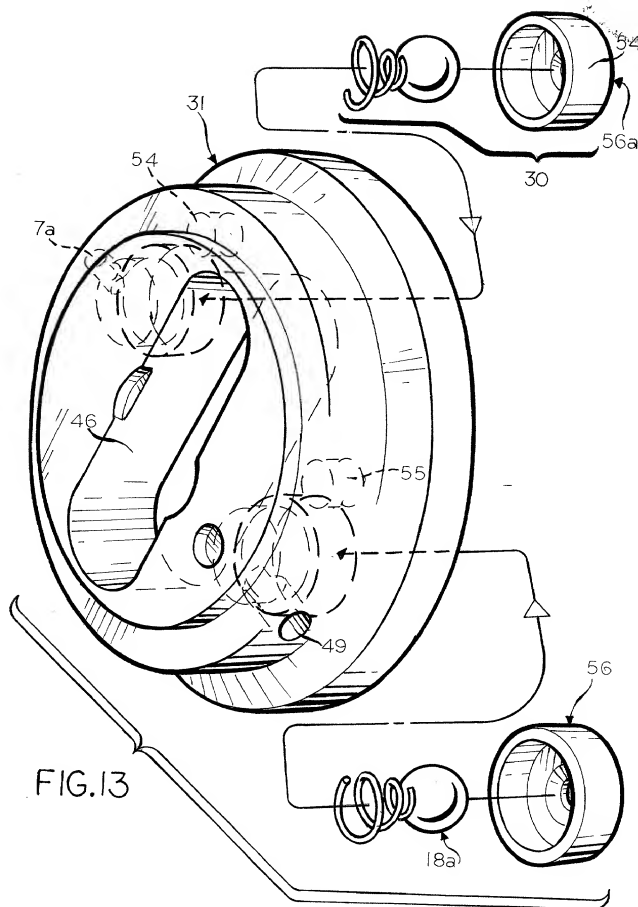


FIG.12



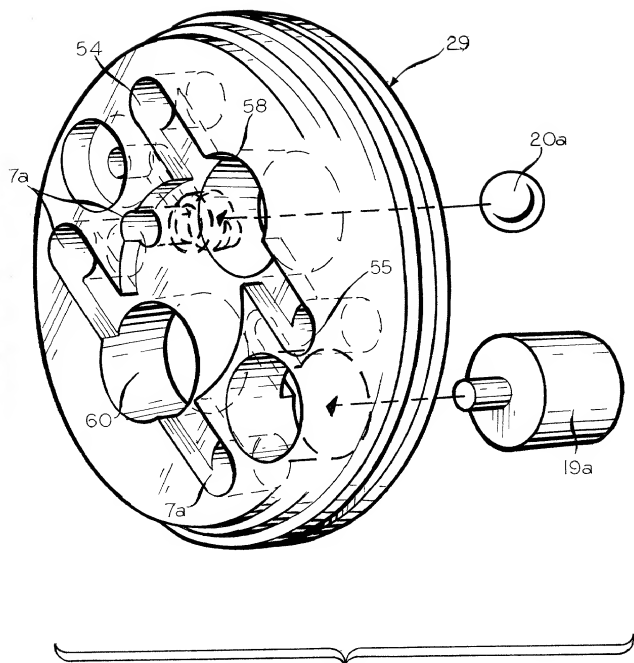


FIG.14

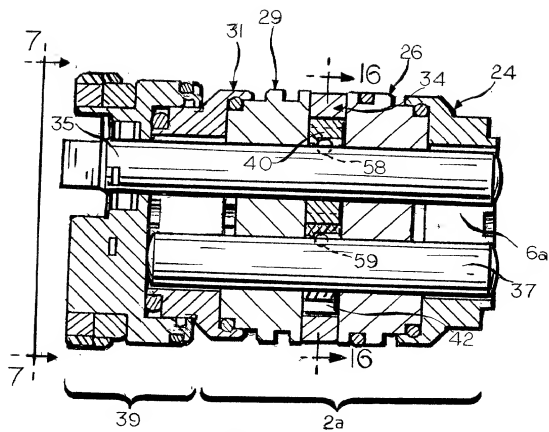


FIG. 15

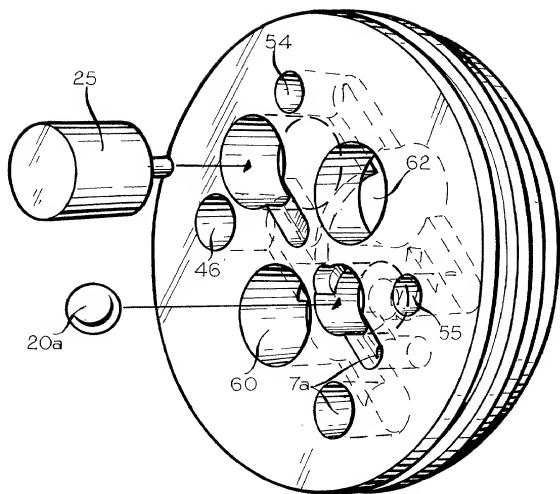


FIG. 17

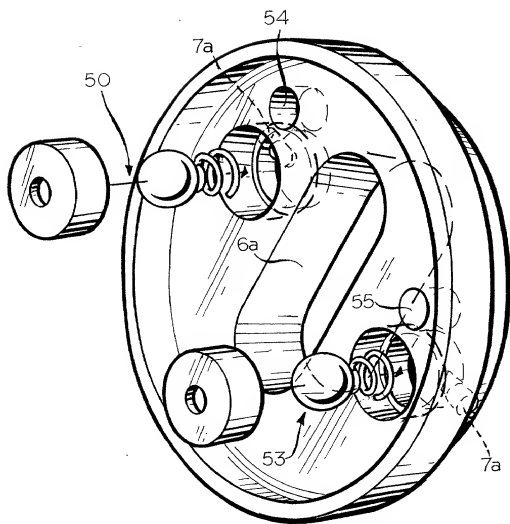
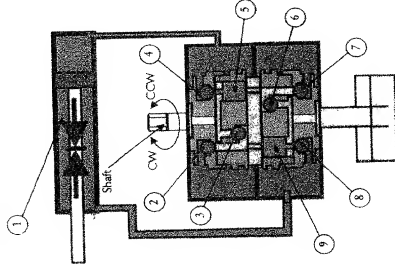


FIG.18

DOUBLE ACTING BI-ROTATIONAL PUMP

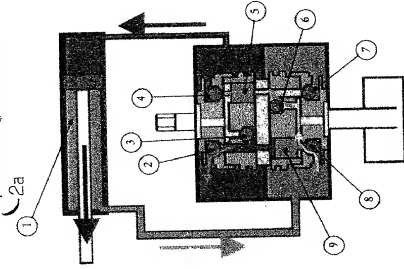
LOCKED-3a

Actuator hydraulically locked in position



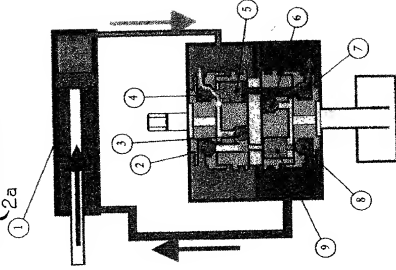
EXTEND-10a

Pump rotating clockwise



RETRACT-11a

Pump rotating counter clockwise



Fluid connected to tank

Fluid locked in between actuator and pump

Fluid in return to tank, low pressure

Fluid high pressure working actuator

1. Hydraulic actuator
2. Check vlv for extend
3. Suction check vlv for extend
4. Pilot check vlv for retract
5. Retract pilot piston

6. Suction check vlv for extend
7. Check vlv for retract
8. Pilot check vlv for extend
9. Extend pilot piston

FIG. 19

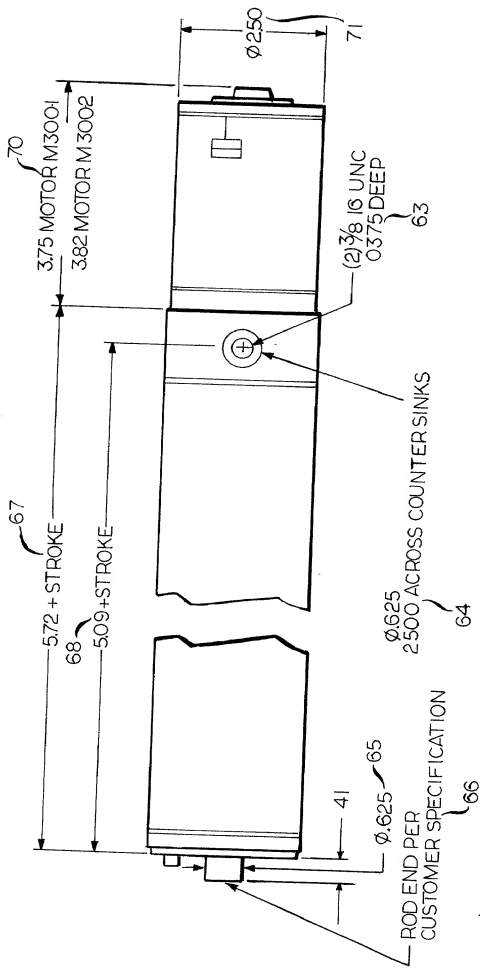


FIG. 20

ACTUATOR - 125 35 FORCE SPEED CURRENT DRAW

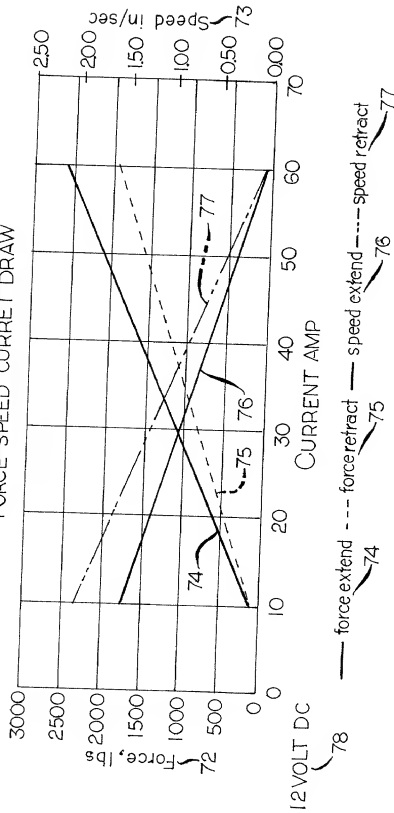


FIG. 21

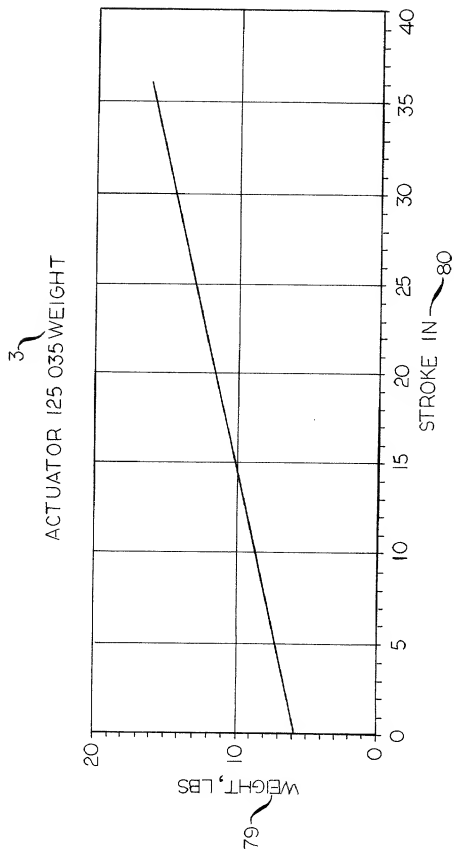


FIG. 22